

SETX siRNA (h): sc-92842

BACKGROUND

SETX (senataxin), also known as ALS4 (amyotrophic lateral sclerosis 4 protein), AOA2 or SCAR1, belongs to the DNA2/NAM7 helicase family. Localizing to the nucleolus or the nucleoplasm in a cell cycle-dependent manner and to the cytoplasm, SETX contains a C-terminal DNA/RNA helicase domain and is believed to function as a helicase involved in RNA processing and DNA repair. Mutations in the gene encoding SETX can lead to ataxia-ocular apraxia 2 (AOA2) or amyotrophic lateral sclerosis 4 (ALS4). AOA2, also known as spinocerebellar ataxia-1 (SCAR1), is an autosomal recessive disorder characterized by progressive neurodegeneration of the cerebellum associated with the loss of Purkinje cells. ALS4 is a familial childhood- or adolescent-onset neurodegenerative disorder affecting both upper and lower motor neurons that ultimately results in fatal paralysis.

REFERENCES

1. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 608465. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
2. Moreira, M.C., et al. 2004. Senataxin, the ortholog of a yeast RNA helicase, is mutant in ataxia-ocular apraxia 2. *Nat. Genet.* 36: 225-227.
3. Chen, Y.Z., et al. 2006. Senataxin, the yeast Sen1p orthologue: characterization of a unique protein in which recessive mutations cause ataxia and dominant mutations cause motor neuron disease. *Neurobiol. Dis.* 23: 97-108.
4. Asaka, T., et al. 2006. Autosomal recessive ataxia with peripheral neuropathy and elevated AFP: novel mutations in SETX. *Neurology* 66: 1580-1581.
5. Nahas, S.A., et al. 2007. Ataxia-oculomotor apraxia 2 patients show no increased sensitivity to ionizing radiation. *Neuromuscul. Disord.* 17: 968-969.

CHROMOSOMAL LOCATION

Genetic locus: SETX (human) mapping to 9q34.13.

PRODUCT

SETX siRNA (h) is a pool of 3 target-specific 19-25 nt siRNAs designed to knock down gene expression. Each vial contains 3.3 nmol of lyophilized siRNA, sufficient for a 10 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see SETX shRNA Plasmid (h): sc-92842-SH and SETX shRNA (h) Lentiviral Particles: sc-92842-V as alternate gene silencing products.

For independent verification of SETX (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-92842A, sc-92842B and sc-92842C.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.

STORAGE AND RESUSPENSION

Store lyophilized siRNA duplex at -20° C with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at -20° C, avoid contact with RNases and repeated freeze thaw cycles.

Resuspend lyophilized siRNA duplex in 330 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

SETX siRNA (h) is recommended for the inhibition of SETX expression in human cells.

SUPPORT REAGENTS

For optimal siRNA transfection efficiency, Santa Cruz Biotechnology's siRNA Transfection Reagent: sc-29528 (0.3 ml), siRNA Transfection Medium: sc-36868 (20 ml) and siRNA Dilution Buffer: sc-29527 (1.5 ml) are recommended. Control siRNAs or Fluorescein Conjugated Control siRNAs are available as 10 μ M in 66 μ l. Each contain a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA. Fluorescein Conjugated Control siRNAs include: sc-36869, sc-44239, sc-44240 and sc-44241. Control siRNAs include: sc-37007, sc-44230, sc-44231, sc-44232, sc-44233, sc-44234, sc-44235, sc-44236, sc-44237 and sc-44238.

GENE EXPRESSION MONITORING

SETX (QQ-7): sc-100319 is recommended as a control antibody for monitoring of SETX gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgG κ BP-FITC: sc-516140 or m-IgG κ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor SETX gene expression knockdown using RT-PCR Primer: SETX (h)-PR: sc-92842-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

RESEARCH USE

For research use only, not for use in diagnostic procedures.